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Thirteen research reviews in this issue pertain to administrative problems in vocational education. They are organized under these topics: (1) National and State Leadership, which includes four reports covering waste, duplication, and inefficiency, state level administration, changing roles of state education departments, and program planning and programing, (2) The Local Administrator which reviews a workshop devoted to trade and industrial cooperative education and a study of the role of advisory committees in junior colleges, (3) Cost-Benefit Analysis, which treats a statement on national policy and a symposium interim report, (4) Plant and Facilities, which reports four publications on the major considerations and aspects of facility planning, and (5) Employment of Retired Military Personnel. "Plain Talk," a continuing column by the author, reviews present research funding limitations, priority research problem areas, and legislative implications for professional vocational education manpower development. The bibliography lists 25 reports which are related to administrative problems. (EM)

RESEARCH VISIBILITY

Synthesis / Application / Dissemination

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ADMINISTRATIVE PROBLEMS IN VOCATIONAL EDUCATION

VOCATIONAL EDUCATION IS OPPORTUNITY: Too often research and the implications of research are directed at professionals *other* than the administrator. Too often administrators are prone to ignore research implications in the press of time and gingerly "delegate" the interpretation of operational meanings of research to others. Happily, there are investigators who believe that the administrative process and its many related problems are researchable. Some of their studies and investigations have been reviewed and abstracted for this issue of *Research Visibility*.

Vocational and technical education as *opportunity* for youths and adults has been much more than an academic challenge for conscientious program directors on all levels of administration. Despite the innovative nature, the contemporary flair and new themes of modern legislative provisions which seek to provide new opportunity, vocational administrators have taken to heart the half-century-old purposes of "promotion and encouragement" of vocational education. Obviously, there will always be a need for creativity in the administrative process and, consequently, the program director is in a position to fulfill this great potential for making and extending vocational opportunity.

Research and development can, and does, provide some of the insight and new knowledge to administrators to indicate new and improvised ways for program extension. It is the function of research dissemination to provide the communications medium for the application of new solutions and alleviations, in addition to the improvement of the administrative process. With ultimate responsibility for the implementation of change in all aspects of the program, including the research program, program directors have a formidable challenge to their leadership.

Implications for national and state administration. The following studies in this category are reported in this issue of *RV*: (a) Greenleigh Associates report for the Committee on Administration of Training Programs to investigate waste, duplication and inefficiency and make recommendations for correction; (b) Kotz of the Stanford Research Institute studies the planning and programming of occupation education; (c) Rice and Toth of the Ohio State

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EDITOR'S NOTE

Research Visibility is a research project of the American Vocational Association. The purpose is to give visibility to significant research: experimental, demonstration and pilot programs; upgrading institutes, seminars and workshops; and other leadership development activities for teachers, supervisors and administrators. The *Research Visibility* report synthesizes important projects which have been reviewed, selected and analyzed for their value to vocational, technical and practical arts educators, guidance personnel, and other leaders in education, manpower and related fields. A composite bibliography of significant research and development materials is included.

The project is cooperatively financed by the American Vocational Association and a Vocational Education Act of 1963 grant (OEG 2-7-070633, project 7-0633; "Synthesis and Application of Research Fundings in Vocational Education").

George L. Brandon, professor in residence (Pennsylvania State University) is editor of *Research Visibility*. He is assisted in the preparation of these reports by Research Assistant Anne Ware.

Center examine the role of state education departments with particular implications for state divisions of vocational-technical education; and (d) Swanson, formerly Kennedy Panel of Consultants staff director, looks nationwide at the administration of vocational education at the state level.

Some aspects of local program administration. Cooperative work experience and its organization and operation as studied through the medium of a workshop is reported by Tuskegee Institute's Harris and Sherard. Occupational education and its relation to the role and functions of advisory committees affiliated with the junior-community college have been studied by Riendeau for the American Association of Junior Colleges.

More on cost and benefit analysis. In a Massachusetts setting, Schaefer (Rutgers) and Kaufman (Penn State) edit a preliminary report of a prospectus for change for an Advisory Council on Education. The "change" idea through innovation makes up an important statement of national policy reported by Collado of the Committee for Economic Development as its Research Committee looks at new directions for the American school.

Plant and facilities for shop and laboratory. The study and recommendations of three researchers and investigators with particular concern for (a) planning urban school facilities; (b) a comprehensive concept for planning, and (c) an experimental, mobile facility for instruction in engineering technology are reported from the work of HEW's Chase, Pittsburgh School's Kishkunas, and New Mexico State University's Kleine, respectively.

Educational manpower recruitment and utilization from retired military personnel. This topic is an investigation of the Bureau of Social Science Research reported by Sharp and Biderman.

Formulation of policy for manpower and training. Accompanying the recurrent theme of evaluation and assessment of education, particularly of vocational and technical education, there is no escaping the many persistent voices which demand a new framework for the conceptualization of national manpower, including *educational* manpower, and training doctrine to go with it. Vocational and technical education in its many forms is invariably at the heart of the attention and the discussion. This fact is crystal clear both in the reports of the Committee on Administration of Training Programs, chaired by W. E. Vivian of Electromedia, Inc., and an August 1968 publication of the Task Force on Occupational Training in industry. (*See bibliography for details.*)

The reports of the two committees are highly related to the July 1968 report of the Committee for Economic Development (CED) despite the fact that the latter concentrates its attention on innovations and new directions for the American school. The common denominator of all three reports is their formulation of *national* policy. There is strong documentation from the past that CED statements of policy and recommendation have stirred up attention and action in more than an academic manner.

It is more than a fair assumption that CED's Research and Policy Committee will provoke great discussion (and action) on its recommendations of: (a) better school organization for innovation and change; (b) increased emphasis on basic and applied research and its dissemination and application; (c) cost-benefits and cost-effectiveness analyses, and (d) the establishment of a national Commission on Research, Innovation and Evalution in Education. At least these four emphases and numerous other recommendations of CED are addressed to administrators in the schools at state and local levels for the improvement of American education through the application of program accounting techniques, more extensive use of school facilities (probably daily and yearly), and the investigation (cost and benefits studies) of the extensive utilization of audiovisual equipment, television, computers, and other devices as applied to instruction in the schools on a wide scale.

TOPIC ONE: National and State Leadership

See Bibliography for information on availability of complete studies

Opening the Doors: Job Training Programs. A Report to the Committee on Administration of Training Programs. Arthur Greenleigh. Greenleigh Associates, Inc., New York. February 1968.

This is a study of the administration of training programs financed by federal funds to determine "if there is waste, duplication and inefficiency in administering these programs as many individual programs and, if this determination is in the affirmative, to make recommendations for correction."

In Part One, "waste" is defined as useless consumption or expenditure and use without adequate return; "duplication" is anything corresponding in all respects to something else; and "inefficiency" is an inability to effect or achieve the desired result with reasonable economy of means. Greenleigh reports, "There is waste and inefficiency and—to a much more limited extent—duplication, in the training program as presently operated." He also indicates that:

> The extent to which waste, duplication, and inefficiency exists is not so great that the usefulness of the program is vitiated, although their effectiveness is diminished.
>
> Waste, duplication, and inefficiency are not entirely attributable to administrative shortcomings. These are present, but waste, duplication and inefficiency are often caused or exacerbated by other factors, such as statutory constraints, fiscal limitations, etc.
>
> Waste, duplication and inefficiency are not solely the result of administering the programs as many individual programs. This is an element, but by no means the only one.

Greenleigh makes 23 recommendations which call for statutory and administrative changes. These recommendations are based on the findings from his study and upon a review of relevant documents and publications. The author looked at every level of government which is involved in the administration of training programs. He observed two states, California and Missouri, which had diverse job-training programs and socioeconomic characteristics. The

rograms of Oakland, Fresno, St. Louis, and Springfield, hich differ in training program activity, size, urbanization nd other critical characteristics, were examined in detail. le also got information on job-training programs and mployment Service relationships in six other cities: Bos- on, Dallas, Huntington, Miami, Phoenix, and Seattle.

Greenleigh was impressed with the useful activity which s evident in the programs and states, "There is nothing rong with the programs that better structures and better upport will not remedy."

Greenleigh's recommendations are operational in nature, .e., given administrative concurrence and legislative consen- sus, the necessary changes will come about in a short period of time. Some of the recommendations are for administra- tive response to a specific problem, in which case operation- al procedure is not given.

Some of the problems require more experience in order to attain long-range solutions. But the author feels there is sufficient experience to take some kind of intelligent action now. Shortcomings of the manpower programs must be confronted quickly because of the explosive nature of the current situation. Since there are tens of thousands waiting for training, entry must be widened as quickly as possible.

A representative sample of Greenleigh's recommendations are listed below.

1. Single-agency consolidation is not recommended at this time because it would not solve the grave problems of lack of coordination and fragmentation. Awkward as it is, and urgently needing changes short of complete consolidation, the present distribution of program administration does utilize the special expertise of Labor in manpower, HEW in education and welfare, and OEO in the explosive problems of poverty and social disadvantage.

2. A national manpower policy should be articulated, setting forth goals and establishing priorities for various target populations and for different types of training. The policy should be both long range and immediate. It should include a commitment to solve the problems with which manpower policy is concerned. The President's Committee on Manpower should develop the national manpower poli- cy, with the assistance of whatever task force it designates.

3. The lack of advance planning and the fragmentation of training efforts at the local level are among the clearest facts to emerge from this study. Planning grants should be made available to state and/or local governments for the development of comprehensive manpower plans, incorpora- ting education, work and training programs with the neces- sary sequential linkages, and related manpower services.

4. Continuing evaluation should be provided to (a) gauge progress and identify shortcomings at the project level, as well as the program level; (b) serve as a basis for national policy decisions on allocation of resources; and (c) to guide administrative decision on re-funding individu- al projects.

5. Inservice training should be available for manpower program administrators (including the staff of the Employ- ment Service) at the federal, regional, state, county, and local levels along lines which would most effectively strengthen staff capability for program implementation, inter- change of information about manpower problems and pro- gram techniques, and coordination among programs, agen- cies and levels of government.

6. Funding procedures in all programs should be stream- lined with a view to simplification, reduction in the number of steps required, delegation of decision-making powers of federal agencies below the national level to the extent feasible, and reduction in the amount of time required for processing.

7. Two new linkages are recommended between the vocational education system and the local job-training com- plex: (a) a substantial amount of funds authorized under the Vocational Education Act of 1963 should be earmarked for "special needs" and used by the vocational education system in conjunction with comprehensive work and train- ing programs; (b) the vocational education in-school pro- grams should be offered to youth outside the school system, via an outreach program, and in the form of cooperative education (i.e., institutional training plus part-time training- related employment).

Part Two of this final report is intended for those who desire to have complete documentation of what was done and what was found. It also contains a series of tables which were developed to explicate the data generated in the course of making the study.

A Nationwide Study of the Administration of Vocational-Technical Education at the State Level. J. Chester Swanson. University of California. Berkeley. August 1967. (Volume One of this report contains a description of the study and Volume Two contains the appendixes thereto.)

Is vocational-technical education keeping pace with prog- ress being made in other areas of education; can its current policies, programs and procedures meet the needs of our progressive economy? This study attempts to gain a view of the current status of state-level administration of vocational- technical education. The stated purpose of the project was "to provide pertinent, accurate information for use, primar- ily, by state agency staffs in their efforts to meet the major challenges confronting them." Another purpose was to develop instruments "to expedite improvement in the scope, quality and coverage of vocational and technical education in local schools, by increasing the effectiveness of state agency leadership, service and administration in this field of education."

To facilitate planning and implementation of the various complex parts of the study the Program Evaluation and Review Technique (PERT) was applied to the project.

Data were collected during visits to 40 states and Puerto Rico. There was an initial "readiness" visit during which a project staff member described the purposes of the project and requested the cooperation of the chief state school officer, the state director of vocational education and some of their staff in general and vocational education. This was followed by a letter describing the upcoming data collection visit which was held about a month later. At the time of this second visit data were obtained from the Group Interview

Guide, individual interviews, personal record of work activity forms, and other documents and materials.

The project was divided into five major studies, each designed to meet a specific objective. They are briefly summarized below.

Current Status of the Organization for Administration Of Vocational-Technical Education at the State Level

The objective of this sudy was to "prepare a detailed description of the administration of and services provided for vocational-technical education in each state, indicating the differences among states in organization, personnel and services provided and identifying current trends in administrative organization functions and activities."

The study was based on data collected during the 1965-66 and 1966-67 school years, the latter being incomplete and the former being inconsistent since they were obtained from different sources in the different states. The study indicates that vocational education is, in most states, an integral part of the total state education programs.

The ratio of state staff to teachers varies from 1 to 240, to 1 to 9. Public expenditures for vocational-technical education for the school year 1965-66 were 150 percent higher than expenditures in 1962-63. This is not a complete report, as it covers only those activities which conform to the definition of vocational education in Public Law 88-210 (Vocational Education Act of 1963).

Study of Perceptions of State-Level Administration Of Vocational-Technical Education

The objective of this study was to identify and analyze perceptions of the roles and functions of state agencies for vocational-technical education and what they should be. Data were obtained for this study from the Group Interview Guide which was administered to 1,783 persons in 38 states. Three questions were examined: (a) How is the State Department of Vocational Education (SDVE) viewed in terms of inspection-regulation and leadership-change? (b) What are the respondent's perceived actual and ideal roles of the SDVE? (c) What are the actual and ideal relationships between leadership-change, inspection-regulation and involvement? The data obtained were computer processed and analyzed; 10 clusters were defined, whose reliability coefficients fell between .95 and .80.

A second part of this study depended upon information obtained in individual interviews of 432 people in 38 states and Puerto Rico. Four areas were investigated: the public image of SDVE, the SDVE staff, SDVE relationships with other agencies, and the quality, availability and scope of vocational-technical education programs.

The results from this study of perceptions indicate there are significant differences among groups (SDVE, SDE, other educators, lay policy makers, and other state agency personnel) which may have geographic implications.

Analysis of Selected Professional Staff Positions Within the SDVE

Sixteen states participated in this pilot study to analyze activities of selected professional staff positions. A Personal Record of Work Activity was designed and used to determine "the kinds of people with whom professional staff personnel interact; the kinds of actions or decisions in which professional staff personnel are involved; and the focus of concern in carrying out a particular action." This instrument was filled out for 14 consecutive days by the 105 participants and the results were data processed. Swanson now believes that with further investigation a reliable technique for self-analysis can be developed.

Development of a Format and Criteria for Self-Analysis Of State Divisions of Vocational-Technical Education

This study was "to improve the scope and quality of vocational-technical education by strengthening agencies responsible for state-level administration of such education." This was to be done by designing and field testing of a format and criteria for self-analysis by the state agencies for vocational education. A workshop of state directors was held to establish some guidelines and identify the criteria that should be used. The instrument was prepared and field tested and is being subjected to further revision and refinement. The author feels this type of instrument is appropriate and will facilitate the improvement of vocational-technical education as a result of improved state-level administration.

Expenditures for Vocational-Technical Education

The purpose of this fifth study was to analyze the expenditures for vocational education through the state agency for public school programs related to federal funds provided to states, with special emphasis given to changes after the passage of the Vocational Education Act of 1963. Expenditures of 1962-63 and 1965-66 were compared in detail for 24 states. Two specific areas of concern were (a) state expenditures for local, area vocational schools, colleges or institutes; and (b) the financing of state agencies for vocational education—administration and supervision, teacher education and research.

This study, as the first phase of a proposed three-year project, reports few definite conclusions. Suggestions for further research accompany the discussions of each of the five studies.

The 410 page second volume of this report contains detailed appendixes:

APPENDIX I: A Taxonomy of Educational Change (including Leadership and Involvement)

APPENDIX II: PERT—General Information and Master Schedule Reports

APPENDIX III: Tabulation of Data for the Study of Organization for the Administration of Vocational-Technical Education

APPENDIX IV: Supplementary Materials for the Study of Perceptions of State Level Administration of Vocational-Technical Education

APPENDIX V: Supplementary Materials for the Analysis of Selected State Vocational-Technical Education Staff Positions

APPENDIX VI: Format and Criteria for Self Analysis of State Agencies for Vocational-Technical Education

The Emerging Role of State Education Departments With Specific Implications for Divisions of Vocational-Technical Education. Edited by Dick C. Rice and Powell E. Toth. The Ohio State University, Columbus. 1967.

This is a report of an interdisciplinary National Conference on State Department Leadership in Vocational Education which was held Feb. 27—March 2, 1967. It contains nine background papers on major forces and factors relevant to state departments, and three papers indicating major implications for the role of the state departments and vocational education divisions. The editors feel that leadership needs in these areas can be alleviated "in part by developing effective inservice and preservice education programs for leadership development."

Listed below are the authors and the titles of the papers which were presented.

- "The Changing Character of General Population: Implications for Education," by Philip M. Hauser and Martin Taitel, University of Chicago.
- "Projections of Changing Student Population," by Eugene P. McLoone, Stanford University.
- "The Changing Occupational Structure With Implications for Education," by Leonard A. Lecht, National Planning Association.
- "Obtaining Optimal Education Opportunity for Disadvantaged Groups," by Robert D. Hess, University of Chicago.
- "State Government and Education," by Lawrence Innaccone, New York University.
- "The Expanding Role of Federal Government in Education with Implications for State Education Departments," by Nicholas A. Masters, The Pennsylvania State University.
- "Emerging Organizational Structures for Facilitating Educational Change with Implications for State Education Departments," by Francis A. J. Ianni, Teacher's College, Columbia University.
- "Emergent Functions and Operations of State Departments of Education," by Ewald B. Nyquist, The University of the State of New York, The State Education Department.
- "The Administration of Vocational Education as an Integral Part of a State Department of Education," by Byrl Shoemaker, The State of Ohio Department of Education.
- "The Emerging Role of the State Department of Education," by Ronald F. Campbell, University of Chicago, and Gerald E. Sroufe, U.S. Office of Education, Washington, D.C.
- "The Emerging Role of State Departments of Education With Implications for Vocational Education," by Gerald B. James, Rockingham Community College, Wentworth, North Carolina.
- "A Strategy for Strengthening State Education Departments Through Research, Development, and Training," by Jack A. Culberton, University Council for Educational Administration, Columbus, Ohio.

The final chapter of the report, written by Dick C. Rice, is a summarization of the discussions which were held during the conference. The major implications were described in terms of Coordination of Educational Efforts, Program Initiation, Evaluation and Maintenance, and Specific Implications for Vocational-Technical Education Division.

Coordination of Educational Efforts

As the emerging role of the state education department was discussed, it became apparent that a predominent feature was the responsibility for coordination of the whole educational system within the state.

Since almost 70 percent (and in some areas, 90 percent) of the youth will not continue their education past the high school level, public school programs are required to educate these people to become productive. Vocational-technical education, then, has as its goal producing workers *and* educated Americans. To insure that, in the process of being assimilated at the state education department level, vocational programs are not de-emphasized in favor of other priorities, several suggestions are presented to develop effective communication and cooperation between state education departments and vocational education division.

These are: (a) legislation requiring practical acquaintance with the world of work by each student leaving the secondary school; (b) inservice education of teachers and state education department members; (c) community conferences to help local leaders and laymen understand the role of vocational education in the total educational program; (d) curriculum planning and development with other state education divisions to implement vocational education processes at all educational levels; (e) acquisition of state funds to finance development of local programs and materials not bound by federal categorical aid programs; (f) development of new organizational structures and avenues for communication at the state level to coordinate some functions in other state education divisions and vocational education divisions, and to insure effective communication and coordination of activity; and (g) organization of department-wide educational planning agencies to identify educational goals and objectives, to identify and clarify problems, to search for and describe alternative solutions to aid decision makers in setting priorities, and to develop long-range and short-range programs for solving problems.

The participants at the conference also believe in the importance of interstate and inter-institutional research, teaching and development activity for vocational education.

Program Initiation, Evaluation and Maintenance

The participants feel that state department leadership is essential for evaluating and maintaining standards in school programs and for initiating new programs in local schools. There are five main areas in which the leaders should be involved: (a) they should be politically sophisticated and be involved in influencing legislation; (b) they should organize long and short-range planning and programming in order to insure that all resources will be properly utilized; (c) they should be directed toward attracting and retaining high quality personnel by upgrading salaries and benefits, extending personnel services, and providing inservice and preservice education programs; (d) they should

stimulate research and be receptive to new information and processes, but should not have a major role in the actual conduct of research; and (e) they should assess the services presently being provided to schools in the light of goals and objectives.

Specific Implications For Vocational-Technical Education Division

There are five areas with specific implications in each.

Political implications

State divisions of vocational education (SDVE) should understand their existing relationships with the legislatures.

The SDVE should critically review existing state law relating to vocational education.

Leaders in SDVE must find ways to utilize the power of the total educational system in state policy development for vocational-technical education.

Professional personnel policy implications

The personnel needs of the SDVE indicate that new sources of professional personnel should be developed.

Inservice education programs for SDVE professional personnel must be implemented.

SDVE should begin working with selected universities and colleges to develop preservice state-leadership preparation programs.

Implications for research

The SDVE should identify needed research projects and provide the necessary incentives to encourage competent research institutions to undertake the projects.

In keeping with its role in the improvement of instruction, the SDVE should develop cooperative relationships with industry, research and development institutions, and regional educational laboratories for the implementation of promising pilot and demonstration projects throughout the state.

Part of the on-going research program of the SDVE should be concerned with developing data systems for educational planning purposes that are compatible with those of other SDVE for providing information vital to regional and national program development.

Implications for organization

The SDVE must find ways to become part of the overall communication network within the state department of education.

More use should be made of temporary or task-oriented groups across specialty lines both in the SDVE and across division lines in the department.

The SDVE should assess its functions and remove or meld any unnecessary duplications of functions performed elsewhere in the department.

The SDVE should forge stronger cooperative ties with other local, state, federal, and private agencies and programs concerned with meeting the increasing need for vocational education.

Program planning and evaluation agencies should be developed in SDVE.

Implications for improvement of instruction

SDVE should lead in the development of major breakthroughs in the vocational-technical education curriculum and give particular attention of the concept of vocational education as part of the process of education at all levels of schooling.

Incentives, e.g. financial and status, controlled by the SDVE should be used to stimulate attainment of superior standards of performance in local programs.

Leaders in SDVE should get out of the business of classroom supervision, and become more involved in demonstration programs and inservice education for larger groups of teachers.

Occupational Education: Planning and Programming. Edited by Arnold Kotz. Stanford Research Institute, Menlo Park, California. September 1967.

This report is a summary of surveys of 6 states and 11 communities and of a conference which dealt with new approaches to planning and programming occupational education. Position papers are presented by experts from various fields. Volume One contains statements related to the identification of objectives and goals, and structuring of alternative programs to achieve them. Volume Two contains statements on program structure and budgeting, benefit/cost analysis, and programs of evaluation and organization.

In Kotz' transmittal letter to the Commissioner of the U.S. Office of Education he indicates the scope and findings of this research study:

> The research found areas where significant improvements in policy formation and in planning concepts and methodology are essential if allocation of federal, state and local resources is to contribute in an optimum manner to multiple objectives and goals. The objectives include: development of vocational competencies and general capabilities for life and social adjustment; development of a trained work force to meet the job demands of the private and public sector; contributions to economic growth and development; bringing the disadvantaged productivity into the main-stream of economic life; accommodating other student interests; and satisfying many other demands placed on the educational system.

Kotz identified 11 primary areas of concern which are briefly described below.

1. There is confusion among legislation at national, state and local levels as to the goals of particular programs.

2. There are many alternative ways to attain objectives, yet there are presently insufficient data on which to base intelligent choice of the best way to achieve local, state and national objectives. Not enough people recognize the importance of having alternative courses of action; rarely are benefit/cost analyses applied in an attempt to compare alternative strategies.

3. There should be established priorities in the approved programs to avoid thoughtless allocation of resources to marginal programs.

4. Expenditures are made for facilities without an economic analysis of their role in the system. For example, a different resource allocation would be required for a plan

to provide vocational schools at the secondary level than for a plan to defer occupational choice to a post-secondary period.

5. Department of Labor surveys of job vacancies and demand produce forecasts which are often not timely or of long-range value, and are thus of little use to vocational educators. Joint agreements between the Departments of Labor and of Health, Education, and Welfare at national and state levels indicate that rapid progress can be attained only with the use of joint concepts, methodology and working and funding arrangements.

6. More creative leadership is called for in planning and programming than that produced by the "so-called state plan" required by the U.S. Office of Education. The state plan is only an agreement by the state to meet federal conditions to enable it to receive federal grants.

7. There is not now available sufficient information for adequate planning, decision-making, and program evaluation. In order to obtain this information for educational managers, automatic data processing systems must be installed which will utilize the necessary data inputs.

8. Although it may have been beneficial to put the emphasis on facilities to be built, teachers to be added or trained and students to be enrolled in the period of assigning resources after the Vocational Education Act of 1963 was passed, it is now necessary to apply modern technology and planning, programming, and decision-making processes to occupational education. These planning processes are aimed at "the disadvantaged and other students and their placement in gainful employment and the behavioral outcomes and other goals, including life adjustment as well as vocational adjustment."

9. Educators should rely upon experts—economists, systems and operations research analysts, and sociologists—outside the educational establishment who have planning and analytical skills which can be used to solve educational problems.

10. State and major community levels should have an overall planning system which integrates objectives and goals, program structure, budget, evaluation, special analytical studies, and program analyses. This will provide needed assistance for educational administrators in the accomplishment of educational objectives.

11. The concepts and methodologies in this report are discussed in terms of occupational education, but they are broad enough to be applied to planning and decision-making at elementary, secondary and higher education levels.

TOPIC TWO: The Local Administrator

See Bibliography for information on availability of complete studies

Workshop on Organization and Operation of Cooperative Work Experience Programs in Trade and Industrial Education. August 14-September 1, 1967. James N. Harris and Austell O. Sherard. Tuskegee Institute, Tuskegee, Alabama. 1967.

This study was planned to inform vocational-technical teacher-educators, coordinators and supervisors from all parts of the United States of recent developments in cooperative education. There were three specific objectives of the workshop: (a) to develop an awareness of the need for promoting cooperative work experience as planned programs to maximally utilize the resources of educational institutions and local industry; (b) to develop an ability to implement programs from available resources; and (c) to develop the ability to effectively evaluate cooperative work experience programs.

One of the workshop consultants, George H. Miller, director, Cooperative Education Program, University of South Florida, Tampa, spoke on "Organization and Administration of Cooperative Work Experience Program." His discussion was geared toward setting up a program at the university level, but he feels that the ideas can be used in planning for secondary school, junior college, technical school, or any other kind of educational institution.

Miller said that the success of a cooperative education program depends upon the understanding and cooperation of the administrators of the participating institution, the employer representatives, the guidance people, and the general public. These people must realize that at all times those participating in the program are to be considered full-time students. Thus the institution is able to keep the student under its jurisdiction at all times.

The cooperative student should be given preference in signing up for class sections that he needs because of his work schedule; he should be able to use the library facilities, even by mail if necessary. The faculty should all be aware of the program and the demands it places on them and on the students. Miller suggests the use of an advisory committee to insure that the faculty is always kept informed, and the use of faculty field trips to observe the student on the job in a trainee position. A newsletter or regular personal interviews can be used to keep in close communication with the students.

Miller stressed the importance of being sure that employers—from management, personnel office, down to the supervisory level—are aware that they have a responsibility to understand the program and as a result to properly utilize the students assigned to them. The community can be reached through the use of releases sent to local newspapers and talks to civic and other local clubs.

J. F. Ingram, another consultant, is director of Vocational Education, State Department of Education, Montgomery, Ala. The title of his paper was "The Role of State Education Departments as Related to Cooperative Education." Ingram described the role of the state education department as one providing leadership and encouragement to schools and teacher coordinators participating in such programs. He feels it is the duty of the state education departments to set

minimum standards for cooperative work programs and particularly for the selection of teacher coordinators.

Other consultants spoke on the objectives of cooperative education, its advantages and disadvantages; a model program was discussed and guidelines presented; and industry's attitude toward cooperative education was discussed.

The Role of the Advisory Committee in Occupational Education in the Junior College. Albert J. Riendeau. American Association of Junior Colleges, Washington, D. C. 1967.

Successful occupational programs depend upon cooperative efforts by industry and education. The advisory committee was formed to give order to this cooperative planning, and this document was written to serve as a guide for those whose responsibility it is to develop and maintain occupational education programs at the junior college level.

If post-high school institutions are to continue to grow to keep up with advancing technological changes, educational and community leaders must understand the nature and objectives of such institutions. Based on recent past performance, the two-year institution is ideally suited to use innovative devices and will thus be able to assume a leadership role in higher education.

The Vocational Education Act of 1963 provides for a State advisory council to consult with the State board in carrying out the State plan as a prerequisite for allotment of federal funds. Further indication of the approved utilization of advisory committees is shown in the following statement:

> The program of instruction will be developed and conducted in consultation with potential employers and other individuals or groups of individuals having skills in and substantive knowledge of the occupation or occupational field of the occupational objective.

The function of an advisory committee will determine its composition and size; however, there are certain community forces to be considered in the selection of committee members. Industry representatives should be familiar with the institutional goals; persons with other than immediate concern with a specific occupation should be included, e.g., academicians, professional people, representatives of government, and school representatives all have an interest in occupational education. This is an excellent opportunity to include minority group leaders in an activity that involves the entire community—with the possibility that increased understanding will result. Educational leaders of the institution should always be kept informed of the activities of the committee. There are several civic and other organizations interested in occupational education—the chambers of commerce, labor unions, Y.M.C.A. chapters, adult education organizations—which are sources for membership on the committee.

Some reliable sources for occupational information are planning departments, employment services, chambers of commerce, state and national sources of information (U.S. Office of Education), and industry councils.

To meet the varied demands of junior colleges, there are three major different types of advisory committees: (a) the general advisory committee function is to review the total occupational education programs being offered in the community and to advise on new requirements and priorities; (b) the occupational advisory committee function is to advise junior college administrators regarding institutional programs in specific trades, crafts, or occupations; and (c) the joint apprenticeship committee function is to perform administrative services pertaining to apprenticeship standards and on-the-job work experiences.

Riendeau discussed in detail the process of selecting members for advisory committees, including the qualifications of prospective members and the manner in which the appointments should be handled. He has suggestions for length of service on the committee, orientation of members, and the number of members necessary; the duties of the committee chairman, secretary and junior college representative are described in detail. Giving recognition to committee members is indicated in several ways. Realizing the importance of a well-planned meeting and proper leaderhsip to insure purposeful sessions of the committee, Riendeau has devoted an entire chapter to a discussion of how to attain this goal through correct procedures and attitudes. This is followed by a chapter on how to implement advisory committee recommendations. The Appendix contains sample invitational letters, meeting notices, minutes, agenda, Advisory Committee Handbook, and certificates of appreciation.

TOPIC THREE: Cost/Benefit Analysis

See Bibliography for information on availability of complete studies

Vocational-Technical Education. A Prospectus for Change. Edited by Carl J. Schaefer and Jacob J. Kaufman. The Commonwealth of Massachusetts, Boston. 1968.

This publication contains the major papers presented at a symposium on vocational-technical education in Boston, Nov. 28-29, 1967, which was sponsored by the Massachusetts Advisory Council on Education. This is an interim document and will be followed by a final report.

There are papers presented by Carl J. Schaefer, Rutgers, The State University; Vincent P. Lannie, New York University; James W. Altman, American Institute for Research; Marvin B. Sussman, Case-Western Reserve University; Mary Jean Bowman, University of Chicago; Ivar Berg, Columbia University; Raymond Hummel, University of Pittsburgh; Benjamin Shimberg, Educational Testing Service, Princeton; Richard A. Gibboney, University of Pennsylvania; Ernest Minelli and Thomas M. Benton, Central Michigan University, and Jacob J. Kaufman, The Pennsylvania State University.

In the introduction, Carl J. Schaefer states that these papers were prepared to provide vocational educators with

information from what has been called the related disciplines. This was done because of the belief that vocational education should be "an integral part of a well-rounded program of education aimed at the development of youth for full participation in society." The history of vocational education, manpower needs, the role of guidance, curriculum development, administration, and teacher preparation are discussed.

Mary Jean Bowman, in a paper titled "Decisions for Vocational Education: An Economist's View," defines economics as the science of decision-making with two main variants: benefit/cost analysis and analysis of cost-effectiveness. She discusses in detail monetary benefit/cost assessments of vocational schooling, reduction of drop-out rates viewed as end or as means, human resource production functions, human resource formation at school or at work, and the manpower forecaster and decisions for vocational education. She believes that vocational preparation should encompass foundation subjects such as language, mathematics and basic science. She also recommends that economists can best act as advisers to educators in performing a systematic examination and assessment of alternatives in terms of specified goals and resource limitations.

Richard A. Gibboney indicated in "The Social Context, Poverty and Vocational Education," that "Until America decides to come to grips with the social crisis posed by poverty and unemployment, vocational programs will always be inadequate to meet the social and educational needs posed by these social problems." He states that it is crucial that vocational educators insure that state and federal legislators remain aware of this relationship.

Jacob J. Kaufman, co-director of this study, summarizes the discussions held during the seminar and presents the general consensus that there is a need to develop an educational curriculum to meet the broad occupational requirements and interests of the youth, particularly those in secondary schools.

Innovation in Education: New Directions for the American School, A Statement on National Policy by the Research and Policy Committee of the Committee for Economic Development. Emilio G. Collado and others. Committee for Economic Development. New York. July 1968.

"A more receptive attitude toward new ideas must be cultivated in school administrators—at the state as well as the local levels—in the schools of education, and among parents. Methods of determining what is useful and accelerating the adoption of proven ideas may well be the greatest need of all in our educational system."

This statement focuses on elementary and secondary school problems of instruction because (a) in any national effort to improve our schools the decision-makers at all levels of education, and the public as well, must give immedate attention to the principles and methods of teaching and learning; and (b) such improvement is a precondition for achieving better education for all—the poor and the affluent, the culturally deprived and the advantaged. Often school districts and schools are handicapped by outmoded organization, overcrowding and understaffing. The American people expect much from their schools and so ways must be found for improving them.

Recognizing that the most serious failures of American education are produced by failures of society—particularly those found in schools in areas of poverty and cultural deprivation and those segregated by color and race—this statement does not attempt to present all the problems faced by schools, nor the solutions to them. On the basis of investigations, however, the statement concludes that there are four "imperatives" today:

1. The American school must be better organized for innovation and change.

2. There must be an increasing emphasis on both basic and applied educational research and on the dissemination and practical application of that research. The useful and effective must be distinguished from the nonproductive and wasteful through developmental studies employing research findings.

3. School systems must continuously employ the result of cost-benefit and cost-effectiveness analyses in order to allocate effectively the resources available to education and to distinguish among programs of high and low priority.

4. There should be established a national Commission on Research, Innovation, and Evaluation in Education to encourage intensified and widespread research, development and evaluation bearing on all aspects of education as a means to more effective methods of instruction.

The costs and benefits "imperative" is discussed in some detail below.

"Cost-benefit analyses provide the means for comparing the resource (costs) to be employed on a specific project with the results (dollar benefits) *likely* to be obtained from it. Cost-effectiveness analyses, on the other hand, are designed to measure the extent to which resources allocated to a specific objective under each of several alternatives *actually* contribute to accomplishing that objective, so that different ways of obtaining the objective may be compared."

The Committee believes that the reorganization of instructional staffing can be attained at a cost per pupil which is close to present spending; however, precise estimates are not available. Estimates should be made of several factors—costs of establishing systems of research, improving teacher education, installing audiovisual or other instructional equipment, etc. To examine such an approach, the Committee has made comparisons of the costs of installing a large-scale system of television and computer-assisted instruction in the public schools.

The Committee states that it is possible to provide broad outlines of the system of information and analysis required to gain improvements in the process of resources allocation. There should be statewide systems to collect information on student and teacher characteristics and financial allocations in districts; in larger school districts or in state departments of education, there should be offices of analytical studies to engage in model building, sensitivity analysis, and forecasting—or planning, programming, and budgeting; and there should be a proper setting for the conduct of serious

high-grade applied research in the educational system.

School administrators are urged to explore the application of program accounting techniques in order to identify costs in school systems and to take advantage of cost comparisons. For example, a spending proposal such as raising teachers' salaries could be assessed against other spending possibilities, e.g. determining what this sum would purchase in terms of programs to retrain teachers. Another suggestion is that school districts could examine the possible benefits that will result from using school facilities after hours for adult education or other programs, or lengthening the present school year.

Although the Committee urges the development and use of educational systems, it believes that impressive gains will occur only as school districts make innovations in their programs. Better information is needed about why some practices fail in some schools and succeed in others. The Committee believe that states and school districts should have systems of financial and other rewards for teachers and administrators who produce innovations which increase the quality and productivity of schools.

What will massive use of instructional resources cost? The consulting firm of Booz, Allen & Hamilton made an independent analysis of the cost of adopting television and computer-assisted instruction in the public schools on a nationwide scale. The following variables were recognized as making it difficult to assess definitely the cost-benefit ratios: the use that schools will eventually make of the various media; the manner in which the material will be produced, for what purposes, and in what quantities; the degree to which costs in new technologies will be offset by raising the productivity of instruction and redeploying present resources. However, it is felt that the Committee's cost studies yield significant data for those interested in improving instruction.

As a basis for the cost studies, a hypothetical model of a school system was designed having (a) 100,000 students in grades one to 12; (b) 152 schools of 24 classrooms each; (c) 30 pupils per elementary class and 25 per secondary class; (d) continuous operation through a 6-hour school day for 150 of the 180 day school year; and (e) one hour of instruction per student per day through television and one hour through computer-assisted instruction.

The projections indicate that the annual cost of providing television programming will range from $800,000 to $4.6 million; the annual cost of providing computer-assisted instruction could range from $9 billion to $24 billion.

The Committee strongly recommends that broad-based studies be made of the costs and benefits that can be expected if the various technologies involving audiovisual equipment, television, computers, and other devices are applied to instruction in the schools on a wide scale. Such studies should take into account the benefits that may be obtained through increasing the effectiveness of the learning process at the same time that they weight the effects of the new resources in terms of the organization of instruction, teacher pay schedules, productivity, probable use by teachers, and other vital matters.

TOPIC FOUR: Plant and Facilities

See Bibliography for information on availability of complete studies

A Comprehensive Concept for Vocational Education Facilities. Louis J. Kishkunas. Pittsburgh Board of Public Education. June 1967.

To provide flexibility, facility planning now has to be based on the student station, as opposed to the classroom unit; also facilities should be capable of modification on an activity-to-activity basis rather than on a year-to-year basis. Kishkunas attempts to answer the following questions in this study: (a) What forms of instructional techniques may evolve from current curriculum innovation efforts? (b) What planning techniques will be sensitive to the facility requirements of new forms of instruction? (c) What type of facilities will be responsive to the needs of instruction as specified through the application of more sensitive planning techniques?

Kishkunas discusses the major themes of curriculum innovation, and he suggests the use of a student activity module which is a unit of student experience involving space, materials, equipment, books, films, lectures, and discussions with teachers and other students.

Viewing the facility planning process as part of the overall educational planning process, a computer program would progress in three stages: (a) a model to analyze class activities; (b) a model to analyze groups of related class areas; and (c) a model to develop space layouts. For example, this would involve feeding detailed information about activities and activity sequences, including number of students, equipment, allowable repair time, and estimated time to complete tasks into a computer which would then simulate what could be expected to happen in the classroom under various conditions.

Kishkunas describes in detail the data that would be fed into the computer in order to give the planner enough information to accurately plan a facility. Using a computer, a spatial layout of an entire school could be presented in a very short period of time.

The author gives a full description of an environmental system that is flexible enough to meet the demands of several approaches to instruction. He says that this is important because in this "age of rapid change it is probable that new alterations will have to be made on recently constructed facilities. . . . If vocational education is to keep pace with new developments and to teach specific skills that are up to date, significant changes in equipment and facility layout must be made on a relatively short-term basis." As an example of creating a truly responsive facility system, he presents in detail a study of the acoustics problem. He also includes several diagrams which show details of solutions to acoustical, lighting and space problems.

Problems in Planning Urban School Facilities. William W. Chase. U.S. Department of Health, Education, and Welfare. Washington, D.C. 1964.

This study identifies problems inherent in planning school facilities in metropolitan central cities. Data for this study were obtained from a group discussion of school planning officials from metropolitan central city school systems in 13 U.S. cities. Out of these discussions nine major problem areas were identified and were then analyzed in terms of subproblems and relationships between the major problem areas. A guide, constructed on the basis of this information, was used in interviews with general superintendents and/or the associate superintendents who were in charge of planning school facilities in the 50 largest cities in the U.S.

Because the main purpose of this study is to identify problems in planning school facilities and the relationship of the problems to metropolitan city planning in general, no numerical value was given to responses, nor were solutions proposed for the problems. Chase points out that this study emphasizes that planning school facilities has to be part of the overall urban planning, and that planning officials should never disregard the overall planning function.

1. ***Urban Renewal Projects.*** The financing of facilities construction can be seriously affected by the removal of property from the tax rolls until a renewal project is completed. One-third of the school officials stated that even though this is a temporary situation, it occurs at the time when construction is indicated. The majority of the school officials indicated there are few problems in cooperative planning between them and urban renewal officials; however, they are concerned with the unpredictable demands caused by uncertainty of the completion dates of redevelopment projects. Two-thirds stated that population shifts caused by urban renewal projects caused problems because they were frequently not able to predict where the displaced people would move. One-half the officials remarked on the difficulty of obtaining land for school sites that were affected. One-third of the respondents expressed concern over the problems caused by inconsistent zoning regulations. On the other hand, the rules and regulations surrounding urban renewal projects are considered specific and clear cut.

2. ***Expressway development.*** Almost half the school officials feel their boards of education had problems with delays in payment for school-owned land that was designated for expressway development. Although land values around expressways generally increase in value, the interim period before completion of the expressway is characterized by loss of revenue by removal of property from the tax rolls, resulting in reduced amounts of money being available to the school district. Half the officials also feel they had difficulty in planning because they did not have adequate information on expressway development.

3. ***Zoning regulations and housing codes.*** Problems arise in the interpretation and enforcement of these regulations. For example, a school system may encompass more than one civil district and find itself beset with conflicting zoning regulations. Or there may be an unanticipated influx of families into a neighborhood which would not occur if the regulations were strictly enforced.

4. ***Building codes.*** Although recognized as being necessary for public health and safety, school officials note that the inconsistencies and outdated nature of many codes cause problems in interpreting them for new construction, older buildings and temporary portable buildings. Most of the officials reported that they follow the more stringent interpretations, but still feel special code requirements should be developed for them.

5. ***Construction Costs and Financing.*** High costs of labor and material often limit building design and result in inefficient school facilities. Respondents also reported the difficulty in establishing valid cost comparisons, and the problem of relating construction cost to educational efficiency. More than half the respondents had problems in designing flexible and adaptable school facilities, and in obtaining high quality construction at reasonable cost.

6. ***Educational program planning.*** Respondents recognized the importance of visualizing future educational programs and ways in which they can be accommodated. Buildings built today are expected to be in use for another 75 to 100 years and, thus, they should be easily adaptable to future programs. Almost two-thirds encounter problems in designing rooms to accommodate new teaching procedures and aids; several feel more research should be done to prove the worth of these new ideas before indulging in expensive remodeling of existing buildings.

7. ***Population movement.*** With the shift of the middle class to the suburbs, the central cities are rapidly becoming the home of the impoverished, and nearly all the school officials feel that the resulting destruction of heterogeneity of function and purpose is a major problem.

8. ***Site limitations.*** More than three-fourths of the respondents feel land acquisition is a serious planning problem, generally because of the scarcity of land in good locations.

9. ***Community relations.*** The community must understand what is desired in the total education program so that it can act intelligently in areas where general public approval is necessary. Thirty percent of the school officials noted difficulty in efforts to inform other government agencies and the public about programs; half had difficulty in describing planning problems to the public and felt this was largely due to the general apathy of the citizens.

Development and Testing of an Experimental Mobile Instructional Facility for Applied Courses in Engineering Technology, by Louis W. Kleine. New Mexico State University, Las Cruces, New Mexico. May 1968.

This project assesses the educational and economic feasibility of providing mobile laboratory facilities for conducting classes in applied electricity at two-year branch colleges of New Mexico State University.

A 40-passenger military surplus bus was purchased and remodeled, putting in work benches, instrument shelves, fluorescent lighting of 70 footcandles, and 115 volt AC electrical outlets. There were eight work stations of 24 square feet each, to accommodate 16 students. The equipment that was installed was comparable to that in the parent institution; the total cost for equipment was $7,456. All the units were placed on a non-rigid work bench in order to keep shock and vibration to a minimum.

During the 1966 fall semester, the mobile unit travelled between the branch colleges at Alamogordo and Carlsbad; there were trained instructors at each location due to the great distances between them. The same text and course outline were used at all locations. A pre-test and post-test were given to the 29 students taking the course at Alamogordo, Carlsbad, and at University Park where the permanent facility was located. The course was again given the following semester at Carlsbad and University Park; there were not enough students to take the course at Alamogordo that semester. This time, 20 students were given a pre-test and post-test.

Using an analysis of co-variance techniques, the investigators found that in the first operational period there were no significant differences in performance on final achievement tests between the students using the mobile facility and the students using the permanent facility. However, for the second operational period, the students using the permanent facility had significantly higher scores. The author suggests that if there were more students taking the course and if one instructor were used for both the permanent and mobile facilities, meaningful variables could be maintained.

Costs to be considered for using a mobile facility in comparison with a permanent facility include facilities, maintenance, depreciation, distance for mobile unit movement, and the use factor (e.g., number of hours per day in actual use). Kleine reports that the comparative cost ratio would be four or five to one when using a new bus, and two or three to one when using a mobile house-trailer type facility. Thus, when there are no permanent facilities and large amounts of funds are unavailable, and where there is a low use factor, the mobile unit is most economical. The amounts expended for this study were: Operational costs (not including salary), 50 cents per mile; modification costs, $1,000; equipment costs, $7,456.

A Guide for Planning Facilities for Occupational Preparation Programs in the Machine Trades. Milton E. Larson. The Ohio State University, Columbus. September 1968.

This guide was designed for use by those personnel responsible for planning occupational programs in the machine trades, and it can be used in the preparation of educational specifications. A fundamental concern in planning vocational and technical education facilities is assuring that their construction is guided by educational requirements and that they are adaptable and flexible to allow modifications and programmatic changes during the lifetime of the building.

According to Larson there were certain fundamental guiding principles to be kept in mind when planning facilities to house programs in machine tool operation, machine shop, and tool and die making. Some are listed below.

1. The educational program is the basis for planning space and facilities.
2. Space and facilities should be planned to accommodate changes in the educational program.
3. The program is planned to serve the needs of a variety of groups in the community.
4. Space and facilities for the program can be extended through the use of community resources.
5. Expanded programs to reach not only the average and those who are college bound, but also the unusually gifted, the physically handicapped, the mentally retarded, and the culturally deprived are needed in vocational machine tool operation, machine shop, and tool and die making.
6. Cooperation among teachers in developing interdisciplinary units or courses is encouraged by the proximity, flexibility, and convenience of classrooms and work areas where teachers can plan together and produce materials.
7. Safe and healthful housing should be provided for all students.
8. Mobile equipment, used where practical, with convenient space for storing it, adds to flexibility and often results in more efficient use of space.
9. The effective use of mechanical teaching aids, such as projectors, screens, recorders, and other devices, will depend upon the accessibility and convenience of storage.
10. Movable partitions, screens, folding doors, room dividers, and portable furnishings and equipment can help in adjusting space requirements to meet specific needs.

The educational philosophy of a school determines the basic features of the educational program. Part II of this guide provides planners with an opportunity to express basic program features which will then serve as guidelines for the program. For example, the planner is asked to indicate the degree (on a four-point scale) of emphasis that will be placed on particular features of the program. Two examples: "Cooperative or team instruction will be used," or "Community resources will be utilized in instruction."

The actual program objectives should be thoroughly understood by the planners prior to the development of educational specifications and facilities design. Again, the planner is asked to indicate the degree of emphasis that will be placed on particular objectives of the program. Examples of objectives are, "To prepared individuals for entry into gainful employment," and "To provide preprofessional educational training for students who plan to enter colleges and universities."

Program content areas in machine trades are (a) machine shop theory, and (b) blueprint reading and shop drawing. This guide contains complete development for these content

FEBRUARY ISSUE . . . Next month, *Research Visibility* will report on studies dealing with Research in Vocational Education.

areas, and for courses in English, mathematics and science, music, and physical education.

The three modes of learning—reaction learning, interaction learning and action learning—dictate the planning of instructional areas. Teacher-centered reaction learning generally takes place in an area designed for lecture and demonstration. Interaction learning takes place in a seminar-type area, and action learning occurs in a laboratory-type area. This guide contains the necessary information for making mathematical determinations of the number of various kinds of instructional areas needed to house specific programs.

TOPIC FIVE: Other

See Bibliography for information on availability of complete studies

The Employment of Retired Military Personnel, by Laure M. Sharp and Albert D. Biderman. Bureau of Social Sciences Research, Inc., Washington, D.C. July 1966.

There are now half a million retired military personnel in the United States and within the next 15 years it is expected that this figure will double. This study deals with the employment-seeking process and problems faced by these men. One of the specific objectives of this study is to determine the transferability from military to civilian occupations of occupational skills, and the resulting implications for training and retraining programs.

A three-phase panel survey was conducted of a group of officers and enlisted men who retired in May 1964. Excluded from this group were those over age 52, women, and those with over 30 percent disability. In the first phase, 3,350 preretirement mail questionnaires dealing with personal and education background, military career and retirement plans were sent out; 2,638 were returned and analyzed. The second phase was a 15-week follow-up survey of 500 respondents who had said they were planning to look for jobs immediately after retiring, plus any counselors and employers they had met with. Of the 435 contacted (95 officers and 340 enlisted men), 73 percent had found employment within the 15-week period. In the third phase, 2,755 postretirement mail questionnaires were distributed for information on seeking, finding and changing jobs during the first six months after retirement; 116 who had indicated they didn't plan to seek a job were also included. There was an 82 percent response rate in the third phase.

In addition to the survey described above, special analyses were obtained from the Department of Defense Survey of Retired Military Personnel, September 1963. Responses were used only from men who retired from 1960 to 1963, and who met the same criteria mentioned in the above survey—3,098 (937 officers and 2,161 enlisted men).

The median age for all the retirees is 43 years; the median rank for officers is the 0-5 level, and for enlisted men is the E-7 level. The median educational level for officers was "some college" and for enlisted men was high school graduation. Before their last assignment only 18 percent of the officers and 16 percent of the enlisted men had asked for assignments which would give them experience they might be able to utilize in civilian jobs. As the retirement date grew closer, however, 57 percent of the officers who had any choice in assignment reported that postretirement considerations were a factor in the choice made. Only 45 percent of the officers and 34 percent of the enlisted men had specific retirement plans a year or more before they retired.

The study revealed that 83 percent of the retirees planned to enter the labor market as soon as they retired; 13 percent planned to do so after taking a vacation. More than 66 percent believed they would find a job within three months, and only three percent thought they would receive a salary lower than that they had received in the military service. Most of them did not believe they would need any extensive retraining—that any necessary training could be obtained on-the-job.

Among all the retirees there was a predominance of administrative and quasi-administrative experience and aspirations, and a limited perception of competence and interest in technical jobs. Most look for a job with a large bureaucratic organization, particularly with the federal government. Prospective employers, on the other hand, felt that the retired applicant needed training more often than did the applicant himself.

Only three percent had received counseling from military sources; the public employment service, both federal and state, was the most popular choice of job information for the enlisted men, and was the second choice for the officers. Eight months after retirement, 71 percent of the officers and 76 percent of the enlisted men were employed; another 13 percent of the officers and 3 percent of the enlisted men were in school full time. Thus 16 percent of the officers and 21 percent of the enlisted men were unemployed at the time—a high percentage compared to the male civilian population of the same age group.

Without detailed job descriptions to compare it is difficult to determine the actual degree of skill transfer; however, it appears that there is a larger transfer for the enlisted men. In cases where one would expect a high degree of transfer, such as in electronics and medical specialities, only a third to a half of the men got employment in their specialties. In some fields it is felt that the inability to transfer seniority is a large barrier to employment in one's specialty.

Overall income levels are low, due to the concentration of many of the officers and enlisted men in low-paying clerical, sales and service jobs. Because of the low income and the perception of skills not fully utilized, close to half the retirees expressed an interest in getting different jobs. Several changed their minds about the need for training, but most still felt that on-the-job was adequate. Sharp and Biderman feel that the "development of suitable training programs undoubtedly would lead to substantial financial rewards for many of the retirees."

Because those officers and enlisted men with higher educational levels were more likely to find jobs, and to receive higher salaries than those less educated, the authors conclude that it is educational achievement that is the most important factor in occupational adjustment—and not a specific military skill.

Retraining programs should be tailored to the special needs of officers and enlisted men. The most appropriate training for officers would be programs leading to college degrees. This would also facilitate placement in sectors where there is much mutual interest (educational and nonprofit institutions, state and local governments) but where lack of formal qualifications and lack of placement channels have led to relatively little placement activity. For many enlisted men, too, programs of formal, college-level instruction might lead to significant pay-offs. But in addition, there appears to be a hard core of hard-to-place ex-servicemen who suffer typically from lack of formal education and a low transfer specialty. Their problems might be best met through specially designed experimental programs.

The survey also points out that intensive placement efforts could decrease the number of skills lost to the civilian economy; however, "ex-military personnel are not likely to contribute significantly to the solution of technical shortage problems."

PLAIN TALK

RESEARCH VISIBILITY continues to be sensitive to the problems of communication with its readership. We hope that a monologue has not developed. The monthly banter of "Plain Talk" has attempted to focus upon the primary purpose of *RV*—synthesis and dissemination of vocational research, the ultimate purpose of which is "utilization."

A proposition for research utilization. Especially in this issue's concern for the utilization of research result by the *administrator*, a great deal of enthusiasm should be generated for the efforts of the USOE Research Utilization Branch. Under dateline of Sept. 1, 1968, an attractive small brochure with a nine-page description was distributed to encourage "Interpretive Studies of Educational Research and Development." Inasmuch as it is indicated in the release that only 10 studies are to be funded in 1969, and another 10 in 1970, it is hoped that more than a few of our vocational researchers will stake early, strategic claims.

The real, salient impact of the release, however, goes far beyond the number of projects and investigators upon whom the fickle funding gods will smile. If the principles upon which research utilization are based are valid as stated in the release, a golden opportunity is presented to administrators, research administrators and other professionals of the vocational community for teamwork and cooperation in making research and research results functional. Notwithstanding the fact that the funding may be lean and not enough to go around, the germs of the utilization idea at this juncture may be of far greater significance than the wherewithal to perform the research. Recalling that administrators are generally soft touches for ideas that really embrace education pay dirt in terms of the improvement of the program, there are many ways to skin the funding cat.

The purpose of the interpretive studies encouragement is practical and functional: "to put the significant findings of educational research and development into the hands of practitioners and those who make educational decisions for their communities." More specific and explanatory, the description of the program "includes the analysis, interpretation, re-packaging and dissemination of research results and other pertinent information for a variety of specific, non-research audiences. "And still more specific to *school administrators*, the purpose of the program (now in its second year) is to "provide information for modifying existing programs or implementing new ones, thereby facilitating more rapid adoption of tested educational innovations."

Priority problem areas are *urban education*: (a) modifying the attitudes of educational personnel toward minority groups and the disadvantaged; (b) restructuring educational patterns in urban areas, and (c) improving urban education through school-community cooperation. In educational *professional development* the priorities are: (a) selection, training and utilization of administrative and professional service personnel; (b) career patterns in education, and (c) new patterns of staff utilization and emerging careers in education. *Higher education* has for its priorities: (a) the prediction of academic success, (b) the college dropout; (c) the application of technology) (d) instructional effectiveness, and (e) the junior college curriculum. The adult and *vocational education* priorities recognized are: (a) training programs for those who teach disadvantaged adults; (b) training librarians for work with minority groups, and (c) occupational guidance and counseling.

Focus—the establishment of policy for vocational education manpower. The vocational administrator is confronted not only with the determination of policy of world-of-work manpower—in some quarters interpreted as supplying the *demand* for persons for the work force—but more critically he faces a need to determine the *professional vocational education manpower* which will be required to operate the many facets of the modernized program. The determination in this respect is both *quantitative* and *qualitative*. There may be a decided new twist to reckon with in policy determination of this nature.

Title II of Public Law 90-576 (Vocational Education Amendments of 1968) is the Vocational Education Leadership and Professional Development Amendment. It is *not* an amendment to the Vocational Education Act of 1963, but it *is* an amendment to the Higher Education Act of 1965, specifically to Title V, (Education Professions Development Act.) Consequently, the funds which will be appropriated for the preparation of leadership and professional vocational personnel are likely to be administered by the OE Bureau of Educational Personnel Training, and not by the Bureau

of Adult, Vocational, and Library Programs. This switch is a new twist. It is probable that other new twists may occur in the administration of other amendments of VEA 1968.

Professional vocational and technical personnel should be prepared to be watchful and to exercise more than a little militancy to influence the direction and use of the funds for vocational personnel development. It remains to be seen in the days ahead what other OE bureaus may cultivate an "interest" in managing other aspects of VEA 1968. If the vocational education community has been disenchanted with the administration of 4c research funds since the advent of the 1963 Act, it may find that there may be other new administrative twists in the offing. The formulation of guidelines and administrative regulations which reflect the true spirit of the vocational amendments as the Congress perceives them should be anticipated and hopefully be the product of extensive vocational personnel movement and frontier thinking.

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